United States Environmental Protection Agency | Prevention, Pesticides And Toxic Substances (7508C) | EPA-738-F-04-003 December 30, 2003

# EPA R.E.D. FACTS

# Oxadiazon

## Pesticide Reregistration

All pesticides sold or distributed in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to humans or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered before November 1, 1984, be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, describing the human health and environmental effects of each pesticide. To implement provisions of the Food Quality Protection Act of 1996, EPA considers the special sensitivity of infants and children to pesticides, as well as aggregate exposure of the public to pesticide residues from all sources, and the cumulative effects of pesticides and other compounds with common mechanisms of toxicity. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that meet the safety standard of the FQPA and can be used without posing unreasonable risks to human health or the environment.

When a pesticide is eligible for reregistration, EPA explains the basis for its decision in a Reregistration Eligibility Decision (RED) document. This fact sheet summarizes the information in the RED document for oxadiazon (Chemical Code No. 109001; Case No. 2485).

## Use Profile

Oxadiazon is a pre-emergent or early post-emergent oxadiazole herbicide registered for commercial use on turf grown on golf courses (~77% of total use) and in apartment/condominium complexes, parks, athletic fields, playgrounds, and cemeteries (~12% of total use). In addition, oxadiazon is used on sod farms and on conifer nurseries and landscapes (i.e. industrial sites, ornamental, roadside plantings, woody, ornamental shrubs, vines and trees, and herbaceous ornamentals). Annual usage is approximately 249,000 pounds on 52,000 acres.

## Regulatory History

Oxadiazon was registered in 1978. A Phase Four generic data call-in (DCI) was issued in May of 1991. Due to additional data required under FIFRA as amended in 1988, the oxadiazon registrant decided to no longer support food uses of oxadiazon. On June 3, 2002, the Agency considered the FQPA safety finding to be met and counted the oxadiazon tolerances as reassessed. There are no CODEX, Canadian, or Mexican tolerances for oxadiazon residues.

## Human Health

### Toxicity

## Assessment

In humans, acute exposure to oxadiazon can cause irritation to the skin, eyes and mucous membranes. In both subchronic and chronic studies, effects on the liver were consistent among the species tested (rat, dog, mouse). Oxadiazon is classified as "likely to be carcinogenic to humans" based on studies that showed an increase in the incidence of liver tumors in two species (mice and rats) following chronic exposure to oxadiazon.

### Dietary Risks

There are no food or feed, or anticipated food or feed uses for oxadiazon. The Registrant is not supporting any tolerances for oxadiazon in the United States. Existing tolerances have been revoked. Likewise, there are no Canadian or Mexican tolerances for oxadiazon.

### Worker Risks

Cancer risks for occupational handlers of wettable-powder formulations of oxadiazon are of concern. Exposure scenarios of concern include mixing/loading/applying wettable powder formulations. To reduce these risks, the wettable powder formulations will be packaged in water-soluble packaging (WSP) only.

### Residential and Other Nonoccupational Risks

The oxadiazon label indicates that the purchase, storage and application of this pesticide is limited to commercial nursery, turf and landscape personnel, and the product is not available to homeowners. Post-application residential exposure scenarios include apartment complexes, golf courses, and playgrounds. The Agency has concluded that residential exposure to oxadiazon is not of concern.

### FQPA Considerations

Given that there are no remaining food/feed uses for oxadiazon, and given that all food tolerances have been revoked, this pesticide no longer falls under the scope of FQPA. As such, no quantitative aggregate assessment of risk from dietary and residential was conducted. EPA has qualitatively evaluated the likelihood of concurrent exposures from different sources of oxadiazon for the general population, including children. Because of the relatively low volume of oxadiazon use on sites other than golf courses, its specialized use pattern, and its relatively high cost, concurrent exposures are not expected.

In addition, oxadiazon was not assessed for the cumulative effects of pesticides having a common mechanism of toxicity. The Agency does not have sufficient information at this time concerning common mechanism issues to determine whether or not oxadiazon shares a common mechanism of toxicity with other substances, including other oxadiazoles. Therefore, for the purposes of this risk assessment, the Agency has assumed that oxadiazon does not share a common mechanism of toxicity with any other chemicals.

## Environmental Assessment

### Ecological Risks

Environmental fate studies indicate that oxadiazon persists in the environment bound to organic matter. In clear, shallow bodies of water, oxadiazon not bound to organic matter may be degraded by sunlight. Alternatively, oxadiazon is defined as a light-dependent peroxidizing herbicide (LDPH), which suggests that toxicity is greater in the presence of light. Studies indicate that after application to soil, oxadiazon remains near the surface, and can be transported via runoff to nearby surface water bodies. Leaching from surface soils to groundwater is expected to be low or negligible, unless the soil is very porous. Since this stable compound can bind to particulate and organic matter, oxadiazon residues can accumulate in sediments at the bottom of bodies of water.

To mitigate ecological risks the technical registrants has agreed to label amendments which include reductions in application rates. In addition, the Agency is requiring that the registrant submit data related to fish and invertebrate toxicity, as well as data from toxicity studies with aquatic plants and sediment.

## Summary

This Fact Sheet explains the Agency's decision regarding the reregistration eligibility of the registered uses of oxadiazon. The Agency has found that the current uses of oxadiazon are eligible for reregistration, provided the changes specified in the RED are made to the packaging and labels.

## Additional Data Required

EPA is requiring the following confirmatory data requirements for oxadiazon:

870.3465: 28-day inhalation toxicity

850.1300: Early-Life Stage in Freshwater and Estuarine/Marine Fish

850.1350: Life Cycle in Freshwater and Estuarine/Marine Invertebrates

850.4100: Seedling Emergence (Tier 1)

850.4150: Vegetative Vigor (Tier 1)

850.4225: Seedling Germination/Emergence

850.4250: Vegetative Vigor (Tier 2)

835.4300: Aerobic Aquatic Metabolism

Aquatic Phototoxicity Studies (Fathead minnow)

Acute and Chronic Sediment Toxicity Testing

Water Monitoring Study

## Product Labeling Changes Required

All oxadiazon end-use products must comply with EPA's current pesticide product labeling requirements. For a comprehensive list of labeling requirements, please see Section V of the oxadiazon RED document.

## Regulatory

EPA has determined that all products containing oxadiazon as the active ingredient are eligible for reregistration, provided changes specified in the oxadiazon

## Conclusion

RED are incorporated into the label and additional data identified in Section V of the RED confirm this conclusion.

## For More Information

EPA is requesting public comments on the Reregistration Eligibility Decision (RED) document for oxadiazon during a 60-day time period, as announced in a Notice of Availability published in the *Federal Register*. To obtain a copy of the oxadiazon RED document, please contact the OPP Public Docket (7502C), US EPA, Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, DC 20460-0001, telephone: (703) 305-5805. Electronic copies of the oxadiazon RED and all supporting documents are also available on the Agency's website at *http://www.cfpub.epa.gov/oppref/rereg/status.cfm?show=rereg*.

For more information about EPA's pesticide reregistration program or the oxadiazon RED, please contact the U.S. EPA, OPP, Special Review and Reregistration Division (7508C), Washington, DC 20460-0001, telephone: (703) 308-8000.

For more information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticide Information Center (NPIC). Call toll-free (800) 858-7378, from 6:30 am to 4:30 pm Pacific Time, or 9:30 am to 7:30 pm Eastern Standard Time, seven days a week. Their internet address is *http://www.npic.orst.edu*.